**WHAT IS CLAIMED IS:**

1. A method of calculating a static formation temperature in a reservoir penetrated by a wellbore; comprising:

estimating the static formation temperature;

calculating a formation fluid temperature at the wellbore, said calculation based, in part, on the estimated static formation temperature;

measuring the temperature of a sample of formation fluid at the wellbore;

comparing the calculated formation fluid temperature at the wellbore with the measured temperature of the sample of formation fluid; and

predicting the static formation temperature by altering the estimate of the static formation temperature until an error between the calculated formation fluid temperature at the wellbore and the measured formation fluid temperature is minimized.

2. The method of claim 1, wherein the calculation of formation fluid temperature at the wellbore comprises solving radial heat flux equations.

3. The method of claim 1, wherein the calculation of formation fluid temperature at the wellbore comprises developing a three-dimensional fluid flow model through the reservoir.

4. The method of claim 3, wherein the three-dimensional fluid flow model through the reservoir is developed using an estimated formation fluid withdrawal rate at the wellbore.

5. The method of claim 1, wherein the calculation of formation fluid temperature at the wellbore comprises solving radial heat flux equations in conjunction with a three-dimensional fluid flow model to develop a calculated fluid formation temperature at the wellbore versus time profile.

6. The method of claim 5, wherein the measured temperature of a sample of formation fluid at the wellbore is used to develop a measured temperature of a sample of formation fluid at the wellbore versus time profile.

7. The method of claim 6, wherein the error between the measured temperature of a sample of formation fluid at the wellbore versus time profile and the calculated formation fluid temperature at the wellbore versus time profile is quantified.

8. The method of claim 7, wherein the static formation temperature is predicted by minimizing the error between the measured temperature of a sample of formation fluid at the wellbore versus time profile and the calculated formation fluid temperature at the wellbore versus time profile.

9. The method of claim 1, further comprising:

inserting a sink probe within the wellbore;

engaging the sink probe with the formation at a wellbore wall; and

removing fluid from the formation at the wellbore by the sink probe at a substantially known withdrawal rate.

10. The method of claim 9, wherein the sink probe is run into the wellbore on a wireline.

11. The method of claim 9, wherein the sink probe is run into the wellbore on a tubular string.

12. A method of calculating a static formation temperature in a reservoir penetrated by a wellbore, comprising:

estimating the static formation temperature in the reservoir and a wellbore fluid temperature;

creating a calculated formation fluid temperature at the wellbore versus time profile for fluid removed from the formation by a sink probe, based upon, in part on the estimates of the static formation temperature in the reservoir and the wellbore fluid temperature;

measuring the temperature of the formation fluid at the wellbore removed from the formation by the sink probe, and creating a measured fluid formation temperature at the wellbore versus time profile;

comparing the measured fluid formation temperature at the wellbore versus time profile to the calculated formation fluid temperature at the wellbore versus time profile; and

predicting the static formation temperature by altering the estimates of the static formation temperature in the reservoir and a wellbore fluid temperature until the error between the measured fluid formation temperature at the wellbore versus

time profile to the calculated formation fluid temperature at the wellbore versus time profile is minimized.

13. The method of claim 12, further comprising:

inserting a sink probe within the wellbore;

engaging the sink probe with a wellbore wall; and

removing fluid from the formation at the wellbore by the sink probe at a substantially known withdrawal rate.

14. The method of claim 13, wherein the sink probe is run into the wellbore on a wireline.

15. The method of claim 13, wherein the sink probe is run into the wellbore on a tubular string.

16. The method of claim 13, wherein the sink probe is run into the wellbore after wellbore fluid circulation within the wellbore has ceased.

17. A method of predicting the static formation temperature in a reservoir penetrated by a wellbore, comprising:

estimating the static formation temperature;

estimating a wellbore fluid temperature;

calculating a calculated formation fluid temperature versus radial distance profile using one-dimensional radial heat flux equations;

calculating a three-dimensional fluid flow model of the reservoir utilizing an estimated formation fluid withdrawal rate at the wellbore, thereby establishing a formation fluid location versus time profile;

combining the calculated formation fluid temperature versus radial distance profile with the formation fluid location versus time profile to create a calculated formation fluid temperature at the wellbore versus time profile;

removing fluid from the formation at the wellbore at a substantially known and substantially constant withdrawal rate;

measuring the temperature of the formation fluid upon removal from the formation;

creating an observed formation fluid temperature at the wellbore versus time profile;

quantifying the error between the observed formation fluid temperature at the wellbore versus time profile and the calculated formation fluid temperature at the wellbore versus time profile;

modifying the estimates of the static formation fluid temperature and the wellbore fluid temperature;

generating a revised calculated formation fluid temperature at the wellbore versus time profile; and

predicting the static formation temperature by repeating the iteration of modifying the estimated static formation fluid temperature and wellbore fluid temperature variables, and generating a revised calculated formation fluid temperature at the wellbore versus time profile, until the error between the calculated formation fluid temperature at the wellbore versus time profile and the observed formation fluid temperature at the wellbore versus time profile is minimized.

18. The method of claim 17, further comprising:

inserting a sink probe within the wellbore;

engaging the sink probe with a wellbore wall; and

removing fluid from the formation at the wellbore by the sink probe at a substantially known withdrawal rate.

19. The method of claim 18, wherein the sink probe is run into the wellbore on a wireline.

20. The method of claim 18, wherein the sink probe is run into the wellbore on a tubular string.

21. The method of claim 18, wherein the sink probe is run into the wellbore after wellbore fluid circulation within the wellbore has ceased.